

# European Scientific Advice Mechanism Scientific advice on the topic *Transforming the Future of Ageing*

Call for nominations for: an international Working Group, one Working Group Vice-Chair, independent reviewers, position of scientific writer, and a published report

The European Scientific Advice Mechanism (SAM) provides independent and transparent scientific advice to the European Commission, working with a European Commission Group of Chief Scientific Advisors (GCSA) and the European Academies (SAPEA).

SAPEA (Science Advice for Policy by European Academies) comprises the five European Academy Networks: <u>Academia Europaea</u>, <u>ALLEA</u>, <u>EASAC</u>, <u>Euro-CASE</u> and <u>FEAM</u> – representing over 100 Academies in over 40 European countries, and spanning the disciplines of engineering, humanities, science and social sciences. The SAPEA project runs over four years and is funded through a grant from the EU's Horizon 2020 programme (*see Annex 5*).

On 9 March 2018, Commissioner for Research, Science and Innovation, Carlos Moedas, sent a letter to the college of Commissioners informing them of the intention of the European Commission Group of Chief Scientific Advisors to take up this topic and inviting their comments to the scoping paper. The Scoping Paper was prepared by SAPEA experts and staff, with input from the Commission services and SAM Secretariat between July 2017 and February 2018 and has been endorsed by the SAPEA board and the GCSA at the end of February 2018.

The Scoping Paper (see Annex 6) sets out the following context and priorities:

The European population is ageing rapidly: its median age is the highest in the world. The extent of the challenges and opportunities that arise from extra years of life will be heavily dependent on several key factors, the most important of which are health, functioning, and opportunities to contribute. Several areas of interest to consider have been identified:

- 1. The prevention of age-related disability and maintaining 'functional ability' within one's own surroundings until the end of life are central aspects of healthy ageing;
- 2. Healthcare and long-term care systems risk becoming unsustainable, with a shrinking labour force no longer able to provide for the care needs of the growing number of older people;
- 3. Europe will be facing a shortage of healthcare workers both in short and long-term. By 2020 in the EU, a deficit of up to 2 million health workers in the EU is expected. When considering the future challenge, it is important to also acknowledge current reliance on unpaid workers, and the impact of a possible decrease in their numbers in the future;
- 4. New and innovative ways of care-giving, favouring functional aspects of care and care decisions will have to be explored, including ambulatory care (or 'age in home')
- 5. ICT, eHealth, innovation in robotics, artificial intelligence and other assistive technologies need to be considered. They can play a crucial role in empowering people of every age to better manage their health and quality of life, in any place. Moreover, they could be cost efficient and impact upon the social aspects of ageing;

Considering the currently ongoing international and European policy responses and actions and the available scientific evidence and advice, the work to be delivered on the present topic will aim to provide multidisciplinary scientific advice for policy addressing the following question:

## **Principal question**

What policies at the EU level could support the Member States in achieving inclusive, fair and sustainable systems of health and social care and to promote the taking up of innovation for ageing societies?

To address the topic, SAPEA and SAM/GCSA are setting up an international Working Group consisting of a Chair, a Vice-Chair, and 16 to 20 experts who will provide their scientific input and be prepared to meet up to four times between July and December 2018, either in person (preferred option) or remotely. The experts will be further involved in responding to comments from an Expert Workshop and Peer-review process. The lead for the activity will be the Federation of the European Academies of Medicine (FEAM), working closely with other European Academy Networks in SAPEA.

SAPEA offers the opportunity to raise the profile of your Academy's work and expertise on a European Level, and we ask as a first step for the contribution and support of your Academy by:

- Nominating Academy Fellows or external experts for the Working Group, in accordance with the expertise indicated in Annex 3.
- Nominating an Academy Fellow that will act as the Vice-Chair of the Working Group, addressing mainly technological or humanities or sociological aspects.
- Nominating Academy Fellows with broad expertise in the overall topic for peer review.
- Suggesting a Science Writer able to assist in conveying the complex scientific evidence in an accessible way ((s)he will be remunerated).
- Submitting Academy reports or other published material that covers any of the topics listed in Annex 3.

Please address your response to Hamed Mobasser, Scientific Policy Officer for FEAM, <a href="https://hamed.mobasser@sapea.info">hamed.mobasser@sapea.info</a> by 11 May 2018.

Nominations of experts and/or scientific writer should be accompanied by a short curriculum vitae (please not more than 2 pages), together with a short explanation on how the nominee's experience meets the areas of expertise needed as listed in Annex 3.

Travel costs for attendance at face-to-face Working Group meetings will be reimbursed by SAPEA.

Further details are provided in the annexes to this letter, including terms and conditions on the selection of candidates. A SAPEA Selection Committee will be responsible for the composition of the Working Group (criteria detailed in Annex 4).

Please contact Hamed Mobasser, <u>hamed.mobasser@sapea.info</u>, if you have questions or would like further information.

Yours sincerely

**Professor Bernard Charpentier** 

**Professor Jean-Pierre Michel** 

**Chair of the SAPEA Consortium** 

**Chair of the Working Group** 

# **Background Information**

Comprehensive information about the Scientific Advice Mechanism: <a href="https://ec.europa.eu/research/sam/index.cfm?pg=home">https://ec.europa.eu/research/sam/index.cfm?pg=home</a>

The scoping paper for Transforming the Future of Ageing: Annex 6

## Annex 2

# **Overall project objectives**

## The project will:

- Define the sub-questions and issues to be examined in the context of the overall scoping paper
- Undertake a review of the evidence, including published material and advice from academies and leading international experts in the relevant fields,
- Establish an appropriate procedure for conducting the review process of interim and final outputs,
- Organise a wider expert consultation meeting in December 2018,
- Draft an Evidence Review Report and evidence-based policy options.
- Submit a final report to the High-Level Group by 12 April 2019,
- Communicate the project's work and achievements in a transparent way, through effective collaboration between the SAM Secretariat and the SAPEA Communications Team.

## List of issues to be covered and indicative areas of expertise sought

Considering the currently ongoing international and European policy responses and actions and the available scientific evidence and advice, the work to be delivered on the present topic will aim to provide multidisciplinary scientific advice for policy addressing the following question:

## **Principal question**

What policies at the EU level could support the Member States in achieving inclusive, fair and sustainable systems of health and social care and to promote the taking up of innovation for ageing societies?

#### <u>Sub-questions under consideration include:</u>

1. How can public health policy best organise efficient prevention, control and treatment of early and midlife risk factors, to ensure that people have good functional ability when they enter old age?

Experts needed in the fields of healthcare, medicine, epigenetics, public health, nutrition, social sciences, behavioural sciences;

2. Which public policies can facilitate the taking up of innovative technologies, software and communication tools by aged adults and healthcare institutions to meet the challenges and opportunities posed by an ageing society?

Experts needed in the fields of life sciences, blockchain technologies, data, community care (general practitioners), at home ageing, e-health, software, communication, marketing, economics, bio-engineering, sociology;

3. What measures (political, social, educational, legal etc.) are needed to enable the health care systems to face the challenges of the aging society?

Experts needed in the fields of medicine, European law, health law, political sciences, health economics, engineering, education, ethics, philosophy;

4. What is needed to build and sustain an appropriately skilled workforce in the upcoming decades for the optimum organisation of health systems and for the delivery of quality health and social care?

Experts needed in the fields of healthcare, employment, education, demography, health economy;

#### Workload:

All experts

A group of 16 to 20 experts is foreseen. The international Working Group will provide their input and be prepared to meet up to four times between July and December 2018, in person (preferred) or remotely. The experts may be further involved or consulted by the Chair in responding to comments from the Expert Workshop and Peer-review process.

# **Criteria for selection of members to the international Working Group**

A SAPEA-appointed Selection Committee will select the experts according to demonstrated excellence in one or more of the fields listed in Annex 3 and other criteria such as:

- Interdisciplinarity; all the **relevant** disciplines should be included
- Broad geographical coverage of Europe
- Inclusion of experts from non-European countries, as appropriate
- 20% female members as a minimum

<u>Please note that</u> nomination does not guarantee selection to any of the positions [Working Group, reviewers, scientific writer]











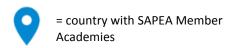
## SAPEA: Science Advice for Policy by European Academies

Spanning the disciplines of engineering, humanities, medicine, natural sciences and social sciences, SAPEA brings together the outstanding knowledge and expertise of Fellows from over 100 Academies, Young Academies and Learned Societies in over 40 countries across Europe

SAPEA is part of the European Scientific Advice Mechanism (SAM) which provides independent, interdisciplinary and evidence-based scientific advice on policy issues to the European Commission, working closely with the SAM **High Level Group of Scientific Advisors** 

The project is funded through a grant from the EU's Horizon 2020 programme





Academies' independence, academic expertise and convening power make them a critical source of evidence for policymakers and the wider public, providing an unbiased, balanced and transparent perspective. Academies within SAPEA are members of one or more of the European Academy Networks: Academia Europaea, ALLEA, EA-SAC, Euro-CASE and FEAM.

SAPEA will provide a means for closer collaboration between Academies, combining Fellows' expertise in engineering, human, medical, natural, social and technical sciences in a unique way. All Member Academies across Europe are part of SAPEA and are encouraged to participate actively. Opportunities for involvement include:

- suggesting scientific topics
- communicating their latest major scientific outputs to SAPEA
- nominating Fellows to the SAPEA Working Groups, or other events requiring the advice of an expert (e.g. experts' workshops or stakeholder meetings) Fellows' travel costs will be reimbursed
- hosting Working Group meetings direct costs can be covered
- acting as "Lead Academies" for a selected scientific topic
- hosting outreach events event support can be provided
- raising the visibility of Academy work at a European Level by sharing news of activities with the SAPEA Communications Office for the project website

## **SCOPING PAPER**

# **Transforming the Future of Ageing**

## Scope of topic

The European population is ageing rapidly: its median age is the highest in the world. People in nearly every part of the Region are living longer, but their chances of spending these later years in good health and wellbeing vary within and between countries.<sup>1</sup> The demographic old-age dependency ratio (people aged 65 or above relative to those aged 15-64) is projected to increase significantly in the EU in the coming decades. Being about 25% in 2010, it has risen to 29.6% in 2016 and is projected to rise further and eventually reach 51.2% in 2070. This implies that the EU would move from four working-age people for every person aged over 65 years in 2010 to around two working-age persons over the projection horizon.<sup>2</sup>

The extent of the challenges and opportunities that arise from extra years of life will be very heavily dependent on several key factors, the most important of which are health, functioning, and opportunities to contribute.<sup>3</sup>

## 1. What is healthy ageing?

There are different measurement approaches used to describe and assess ageing and judge whether it is active, healthy, or successful. Consequently, it is difficult to conduct and compare research and descriptions of ageing across studies.<sup>4</sup>

A crucial step forward in addressing the challenge of healthy ageing was addressed by the WHO in its World report on Ageing and Health<sup>5</sup>, unanimously endorsed by WHO Member States during the World Health Assembly in May 2016. The term healthy ageing was defined as the process of developing and maintaining the "functional ability" that enables wellbeing in older age

Each individual life exists in a specific set of environments that change over time and is highly dependent on political, economic and social norms, values, and resources, including the extent to which societies promote equal opportunities, prevent inequities, and combat ageism, and ensure access to affordable healthcare and social systems. The close interactions between "intrinsic capacity" (the composite of a person's individual physical and mental capacities) and environmental characteristics, including surroundings itself and support, combine in determining "functional ability".<sup>6</sup>

<sup>&</sup>lt;sup>1</sup> Healthy Ageing - <a href="http://www.euro.who.int/en/health-topics/Life-stages/healthy-ageing">http://www.euro.who.int/en/health-topics/Life-stages/healthy-ageing</a>

<sup>&</sup>lt;sup>2</sup> The 2018 Ageing Report - Underlying Assumptions & Projection Methodologies - https://ec.europa.eu/info/sites/info/files/economy-finance/ip065 en.pdf

<sup>&</sup>lt;sup>3</sup> Ageing and Life Course, J R Beard PhD, A Officer MPH, I Araujo de Carvalho MD, R Sadana ScD, A M Pot PhD, J A Thiyagarajan PhD, Health statistics and information systems (W R Mahanani MSc, S Chatterji MD), consultant (J A E Epping-Jordan PhD), World Health Organization, Geneva, Switzerland; University of Geneva, Geneva, Switzerland (J-P Michel MD); School of International Development, University of East Anglia, Norwich, UK (P Lloyd-Sherlock PhD); and University of Queensland, School of Public Health, Brisbane, QLD, Australia (G M E Peeters PhD). http://dx.doi.org/10.1016/S0140-6736(15)00516-4

<sup>&</sup>lt;sup>4</sup> "Healthy Ageing" Concepts and Measures, JP Michel, R Sadana ScD, JAMDA 18, 460-464, 2017

<sup>&</sup>lt;sup>5</sup> WHO (2015) World Report on Ageing and Health - <a href="http://www.who.int/ageing/events/world-report-2015-launch/en/">http://www.who.int/ageing/events/world-report-2015-launch/en/</a>

<sup>&</sup>lt;sup>6</sup> "Healthy Ageing" Concepts and Measures, JP Michel, R Sadana ScD, JAMADA 18, 460-464, 2017

## 2. Challenges and Opportunities

The prevention of age-related disability and maintaining functional ability within our own surroundings until the end of life are central aspects of healthy ageing. How to create resilience against the risk factors for disability and dependency, and to fight for improved opportunities to contribute to society throughout the whole life process are important questions for focussing adult public health actions. This life course approach connects broader social, political, and environmental determinants of health, including the organisation and effectiveness of healthcare and other social systems, to health outcomes, across all critical life stages.

A coherent and focused inclusive, fair and sustainable public health response that spans multiple sectors and stakeholders is important<sup>7</sup>. Healthcare and long-term care systems risk becoming unsustainable, with a shrinking labour force no longer able to provide for the care needs of the growing number of older people.<sup>8</sup> From the perspective of healthcare and social expenditures, the cost of looking after disability will exceed the cost of treating diseases and multiple morbidities as people age.

#### a. Medical Care

Achieving the goal of healthy ageing is not merely a case of doing more of what is already being done, but to consider the early needs of ageing people to access care built around a common goal of maintaining functional ability. <sup>9</sup> Currently, a major part of elderly people is attended within informal networks of care (family members, friends, volunteers) which enables a high percentage of elderly people to stay at home. <sup>10</sup> With the ageing population and demographic changes it will become increasingly challenging to rely on these informal networks.

Thus, having in mind fairness and sustainability of medical and health care systems across and within the European Union Member States, new and innovative ways of care-giving, in particular for long-term caregiving <sup>11</sup> will have to be explored, including ambulatory care (or "age in home") together with enabling new technologies and their adaptation to the medical field.

<sup>&</sup>lt;sup>7</sup> Medical care for older people – what evidence do we need?, Leopoldina, <a href="http://www.akademienunion.de/fileadmin/redaktion/user-upload/Publikationen/Stellungnahmen/2015">http://www.akademienunion.de/fileadmin/redaktion/user-upload/Publikationen/Stellungnahmen/2015</a> Stellung nahme Evidenzbasierung EN KURZ.pdf

<sup>&</sup>lt;sup>8</sup> The 2018 Ageing Report - Underlying Assumptions & Projection Methodologies - <a href="https://ec.europa.eu/info/sites/info/files/economy-finance/ip065">https://ec.europa.eu/info/sites/info/files/economy-finance/ip065</a> en.pdf

<sup>&</sup>lt;sup>9</sup> Ageing and Life Course (J R Beard PhD, A Officer MPH, I Araujo de Carvalho MD, R Sadana ScD, A M Pot PhD, J A Thiyagarajan PhD), Health statistics and information systems (W R Mahanani MSc, S Chatterji MD), consultant (J A E Epping-Jordan PhD), World Health Organization, Geneva, Switzerland; University of Geneva, Geneva, Switzerland (J-P Michel MD); School of International Development, University of East Anglia, Norwich, UK (P Lloyd-Sherlock PhD); and University of Queensland, School of Public Health, Brisbane, QLD, Australia (G M E Peeters PhD). Published Online October 29, 2015 <a href="http://dx.doi.org/10.1016/S0140-6736(15)00516-4">http://dx.doi.org/10.1016/S0140-6736(15)00516-4</a>

<sup>&</sup>lt;sup>10</sup> J Gerontol B Psychol Sci Soc Sci. 2017 Dec 11. doi: 10.1093/geronb/gbx133. [Epub ahead of print] Long-term Care Provision and the Well-Being of Spousal Caregivers: An Analysis of 138 European Regions. Wagner M<sup>1</sup>, Brandt M<sup>2</sup>.

<sup>&</sup>lt;sup>11</sup> Ageing and Life Course (J R Beard PhD, A Officer MPH, I Araujo de Carvalho MD, R Sadana ScD, A M Pot PhD, J A Thiyagarajan PhD), Health statistics and information systems (W R Mahanani MSc, S Chatterji MD), consultant (J A E Epping-Jordan PhD), World Health Organization, Geneva, Switzerland; University of Geneva, Geneva, Switzerland (J-P Michel MD); School of International Development, University of East Anglia, Norwich, UK (P Lloyd-Sherlock PhD); and University of Queensland, School of Public Health, Brisbane, QLD, Australia (G M E Peeters PhD). Published Online October 29, 2015 <a href="http://dx.doi.org/10.1016/S0140-6736(15)00516-4">http://dx.doi.org/10.1016/S0140-6736(15)00516-4</a>

#### b. Digital innovation in health and care

Tele-health solutions are already used by millions of Europeans and health professionals to keep track of their health and well-being, including outside the clinical environment in real life contexts. While digital healthcare has shown great potential, it still must prove to be able to meet the expectation of improving the healthcare systems and to generate efficiency savings. In the context of an ageing society, with the costs of health and social care expected to rise substantially to about 9% of EU GDP in 2050, ICT and eHealth, if proven effective and efficient, can play a crucial role in maintaining cost efficient and high-quality health and social care, and in empowering people of every age to better manage their health and quality of life, in any place.<sup>12</sup>

The application of eHealth for elderly people requires a proper design of the technologies to be used<sup>13</sup>, as well as specific efforts to improve digital literacy (both for elderly people and for healthcare professionals). It equally requires, consistency with the values stated in the Charter of Fundamental Rights and the relevant pan-European and national legal provisions (e.g. on data protection).

Finally, innovation in robotics, artificial intelligence and other assistive technologies need to be considered, particularly for their potential to impact upon the social aspects of ageing such as the prevention of social isolation and social exclusion.

## c. Education, Employment and Social Issues

Considering the position of care providers, it is necessary to distinguish:

- The informal networks of care, comprising non-professionals (family members, neighbours, friends).
- The formal networks of care, constituted by different categories of trained healthcare professionals.

In the case of the formal networks of care, Europe will be facing a shortage of healthcare workers both in short and long-term. By 2020 in the EU, a deficit of up to 2 million health workers in the EU is expected<sup>14</sup>. This presents serious challenges for the optimum organisation of health systems and for the delivery of quality healthcare and requires actions to fill emerging gaps, e.g. regarding educational and professional aspects in relation to the informal networks of care, including family support systems. An important question is to identify the challenge considering current reliance on "unpaid workers", and the impact of a possible decrease in their numbers in the future.

## 3. Public Policies

The increasing interconnectivity of health policies and health systems across the European Union, with cross-border and cross regional healthcare, interoperability and standards are key factors to consider when framing any potential policy response best suited to facilitating the goal of healthy ageing. As stated in in Art 168 of the Lisbon Treaty, EU health policy serves to complement national policies, and to ensure health protection in all EU policies. This means that pan-European policy actions on ageing are intrinsically confronted with both the principle of subsidiarity and the European Union mandate to support the efforts

<sup>&</sup>lt;sup>12</sup> Digital Single Market eHealth – "http://ec.europa.eu/digital-agenda/en/ehealth-and-ageing"

<sup>&</sup>lt;sup>13</sup> Geriatricians and Technology, JP Michel, A Franco, JAMDA 15, 860-862, 2014

<sup>&</sup>lt;sup>14</sup> Healthy ageing – share Eric conference, Vilnius – 17 march 2016 - <a href="https://ec.europa.eu/commission/commissioners/2014-2019/andriukaitis/announcements/healthy-ageing-share-eric-conference-vilnius-17-march-2016">https://ec.europa.eu/commission/commissioners/2014-2019/andriukaitis/announcements/healthy-ageing-share-eric-conference-vilnius-17-march-2016</a> en

of EU countries to protect and improve the health of their citizens and to ensure the accessibility, effectiveness and resilience of their health systems. This is done through various means, including by:

- Proposing legislation
- Providing financial support
- Coordinating and facilitating the exchange of best practices between EU countries and health experts
- Health promotion activities.

In Europe, two out of three new-borns in 2017 is likely to reach the age of 100. This simple demographic prospect demonstrates that ageing will become an important and holistic issues of our society.

The European Commission has identified active and healthy ageing as a major societal challenge common to all European countries, and an area which presents considerable potential for Europe to lead the world in providing innovative solutions.<sup>15</sup>

Within the overall framework of the EU approach to ageing, some common key challenges for the European Union and its Member States have been identified.<sup>16</sup> These include adjusting to an ageing and shrinking workforce, and yet at the same time achieving access to high quality healthcare for all while ensuring the financial viability of healthcare systems.

In a policy speech in Brussels at the meeting on chronic diseases "towards the better prevention and management of chronic diseases"<sup>17</sup>, on 21<sup>st</sup> of April 2016, European Commissioner for Health and Food Safety Vytenis Andriukaitis stated that to keep people healthy for as long as possible there is a need to focus on three Ps: Prevention, promotion and protection:

- Promoting good health through healthy eating, exercise, healthy living and working conditions;
- Protecting citizens by ensuring safety at work, on roads, or elsewhere;
- Preventing disease tackling all the risk factors.

Commissioner Andriukaitis also stated the need to overcome the fragmentation and isolation of prevention, diagnosis, treatment and care and called for evidence-based prevention, comprehensive and integrated treatment and care that make the best use of available funds.

In his speech on healthy ageing in Vilnius in March 2016 the Commissioner emphasised the key role that digital innovation has to play in the future of healthcare<sup>18</sup>. The importance of such a policy can also be seen in the recent launch of a public consultation on how Europe should promote digital innovation in health and care, for the benefits of citizens and health systems in Europe.<sup>19</sup>

http://ec.europa.eu/health/major\_chronic\_diseases/diseases/ageing\_related\_diseases\_en#fragment0

https://ec.europa.eu/commission/commissioners/2014-2019/andriukaitis/announcements/healthy-ageing-share-eric-conference-vilnius-17-march-2016\_en

 $<sup>^{15}</sup> European innovation partnership on Active and Healthy Ageing - \underline{https://ec.europa.eu/eip/ageing/home\_en}$ 

<sup>&</sup>lt;sup>16</sup> Ageing and health

<sup>&</sup>lt;sup>17</sup> Preventing and addressing chronic diseases: a commission priority - meeting on chronic diseases "towards the better prevention and management of chronic diseases" - 21 April 2016 – Brussels

<sup>&</sup>lt;sup>18</sup> Healthy ageing – share Eric conference, Vilnius – 17 March 2016 -

<sup>&</sup>lt;sup>19</sup> Commission launches public consultation on Health and Care in the Digital Single Market - http://europa.eu/rapid/press-release IP-17-2085 en.htm

Considering the currently ongoing international and European policy responses and actions and the available scientific evidence and advice, the science advice to be delivered under the present topic will aim to provide multidisciplinary scientific advice for policy addressing the following question:

## **Principal question**

What policies at the EU level could support the Member States in achieving inclusive, fair and sustainable systems of health and social care and to promote the taking up of innovation for ageing societies?

## Potentially interested and responsible DG's

The Directorate-General for Employment, Social Affairs and Inclusion (**DG EMPL**), Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (**DG GROW**), Directorate-General for Health and Food Safety (**DG SANTE**), Directorate-General Research and Innovation (**DG RTD**) and Directorate-General for Communications Networks, Content & Technology (**DG CONNECT**), Directorate-General for Education and Culture (**DG EAC**), Directorate-General for Economic and Financial Affairs (**DG ECFIN**), Directorate-General for Justice and Consumers (**DG JUST**).

## **Keywords for possible content**

Health and Ageing, Social Care, Employment, Demographic Change, Digitisation of Health and Care Services, Ambulatory Medicine/Care, Age in Home, Innovative Technology, Outpatient Care, Active and Healthy Ageing, Economic Costs, Integrated Care, Mobile Health, ICT, Blockchain Technology, E-Health